 DS Algo Essentials | December 2020

**DS Algorithm Essentials | December 2020-January 2021**

**Assignment Day 8 | 2nd January 2021**

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## Question 1

**A Barua number is a number which consists of only zeroes and ones and has only one 1. Barua number will start with 1. Given numbers, find out the multiplication of the numbers. Note: The input may contain one decimal number and all other Barua numbers. (Assume that each number is very large and total number of values give is also very large)**

**Input 1: 100 10 12 1000**

**Output 1: 12000000**

**Input 2: 100 121 1000000000000000**

**Output 2: 12100000000000000000**

**Input 3: 10 100 1000**

**Output 3: 1000000**

**Code ( Written in Python ) :**

**def multiplyList(myList) :**

**result = 1**

**for x in myList:**

**result = result \* x**

**return result**

**string\_list=map(int,input().split())**

**list1=string\_list**

**print(multiplyList(list1))**

**Question 2**

**Implement push, pop and find the minimum element in a stack in O(1) time complexity.**

**Code:**

**class MinStack(object):**

**min=float('inf')**

**def \_\_init\_\_(self):**

**self.min=float('inf')**

**self.stack = []**

**def push(self, x):**

**if x<=self.min:**

**self.stack.append(self.min)**

**self.min = x**

**self.stack.append(x)**

**def pop(self):**

**t = self.stack[-1]**

**self.stack.pop()**

**if self.min == t:**

**self.min = self.stack[-1]**

**self.stack.pop()**

**def top(self):**

**return self.stack[-1]**

**def getMin(self):**

**return self.min**

**n=MinStack()**

**n.push(0)**

**n.push(19)**

**n.push(-19)**

**print(n.getMin())**

**n.pop()**

**print(n.top())**

**print(n.getMin())**